

February 2021

ARMY COMMUNICATOR

Serving Abroad

Plus:

- *ESB-E*
- *TWI*
- *Signal History*



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The Army Communicator is published as a command information e-publication for the men and women of the United States Army Signal Corps under the provisions of AR 360-1.

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On the Cover

Maj. Mark Natale, US ex-
change officer to the British
Army HQ, (third from right)
Photo provided by Maj.
Mark Natale



Signal Regimental Team

General (ret.) Colin Powell said, “Perpetual optimism is a force multiplier.” This year, let’s each be intentional about being optimistic and we’ll collectively elevate the Signal Corps to new heights. The incredible accomplishments achieved by the Signal Corps in 2020 were captured by our own Signal Soldiers in the many compelling and informative articles in last year’s monthly Army Communicator, and the trend continues in this February 2021 edition.

One of the many benefits of an Army career is the opportunity to receive innovative and world-class training. Whether that training takes place in a university setting, a civilian organization, a field environment, or a virtual platform, the Army strongly advocates for the expansion of its Soldiers’ peripheral knowledge. As you know, Signal Soldiers are familiar with the ever-evolving world of information systems and are keenly aware of the importance placed on remaining apprised of the technological evolutions on the horizon; we must therefore prioritize self-development and continuing education, while striving to attain assignments that allow for relevant growth.

In this issue, we highlight two of the many unique opportunities for Signal Leaders to attain personal and professional growth. The Military Personnel Exchange Program (MPEP) gives participants the chance to live in a foreign country and work with the host nation’s military. Selected personnel will be immersed in a different culture, learn new and creative ways to operate, and will forge incredible friendships. It’s a remarkable opportunity and I highly recommend it to those interested in learning more about it.

Another great program for Signaleers spotlighted in this issue is Training With Industry (TWI). Participating Soldiers work at one of several telecommunication corporations in which they bring their military experience into the private sector, and in turn learn from the organizations responsible for developing the latest technologies. It truly is a win-win partnership and unique assignment for those selected.

These are just two of the many ways a military career can offer a truly unparalleled opportunity to both learn and lead in coveted locations and organizations around the world. Every assignment, every mission, and every exercise is an opportunity to extend ourselves, which is necessary, for true growth doesn’t start until we step outside of our comfort zone.

A great way to keep up with available opportunities and to learn what’s happening with the Regiment is right here in the pages of the Army Communicator. Remember, if there’s something you want us to cover, or something you want to contribute, contact our team. Thank you again for reading and as always, Pro Patria Vigilans!



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Signal School
Commandant



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First ESB-E formation formally equipped with modernized gear

Amy Walker
PM TN/PEO C3T public affairs

The Army is nearing completion of the pure fleet fielding of the 50th Expeditionary Signal Battalion- Enhanced, or ESB-E -- the first unit equipped with a newly modernized, agile and scalable tactical network transport tool suite.

For over a year, the 50th ESB-E served as the ESB-E pilot unit, with three of its companies providing feedback on different sets of commercial prototype network transport equipment, which informed Army design and fielding decisions on how to best modernize legacy ESBs. This pure fleet fielding gets the 50th ESB-E's companies on the same equipment baseline.

The new smaller, lighter tactical network transport gear will enable ESB-Es to more rapidly deploy and maneuver across the battlefield and provide robust and resilient network connectivity to the other units they support.

"For the last decade, the signal regiment has been too heavy and required too many assets to move from point A to B," said Lt. Col. Mallory Wampler, commander of the 50th ESB-E, 35th Theater Tactical



Project Manager Tactical Network, at the Program Executive Office for Command, Control and Communications-Tactical (PEO C3T), provides Scalable Network Node (SNN) new equipment training to Soldiers from the 50th Expeditionary Signal Battalion-Enhanced (ESB-E), 35th Theater Tactical Signal Brigade
US Army photo

Signal Brigade. “Now our entire package can fit into one truck and one trailer, and if needed, we can operate out of the back of the trailer. Our center of gravity is a small team that can go anywhere in the world and provide upper tactical internet capability to the warfighter regardless of their mission set, and logistically, now we have more flexibility in how we get it there.”

The Army’s Project Manager (PM) Tactical Network, at the Program Executive Office for Command, Control and Communications-Tactical (PEO C3T), is currently providing new equipment training to 50th ESB-E Soldiers at Fort Bragg, which is expected to be complete by the end of December, in time for the unit’s upcoming Joint



***During Scalable Network Node (SNN) satellite operator new equipment training, Soldiers from the Alpha Company, 50th Expeditionary Signal Battalion–Enhanced (ESB-E) troubleshoot instructor-installed faults on the Very Small Aperture Terminal (VSAT).
US Army photo***

Readiness Training Center rotation.

In addition, PM Tactical Network began fielding the 57th ESB-E -- the second unit equipped-- in November, at Fort Hood, Texas. The 57th ESB-E will use its new tactical network capabilities during upcoming exercises this spring, including Warfighter Exercise 21-03 and Pacific Defender 21.

On the current plan, with potential exceptions due to COVID-19 travel restrictions, the PM will field several ESB-Es per fiscal year until all of its 23 ESBs have been upgraded to the new baseline capability. The Army’s agile acquisition and fielding approach aligns with its two-year incremental Capability Set fielding process, which will allow the service to enhance the ESB-E baseline capability if Soldier feedback warrants it or if evolving technologies become mature enough to be procured.

“The 50th ESB-E is the Army’s first Capability Set 21 enhanced Signal Battalion,” said Lt. Col. Stuart McMillan, product manager for Mission Network, at PM Tactical Network. “This has been a true team effort, with the Network Cross Functional Team and our industry partners working alongside the pilot unit. Together we listened to Soldiers and the needs of the unit to deliver the right mix of network capability that will enable these units to support multi-domain operations and maintain a competitive advantage against increasingly capable adversaries.”

The ESB-E Capability Set 21 baseline equipment package includes the new medium ground satellite terminal and baseband kit, known as the Scalable Network Node (SNN), which replaces the units’ legacy at-the-halt tactical network transport equipment. The SNN can be setup in minutes, and can provide immediate network connectivity using its organic generators until increased power is delivered. The reduced size and

system complexity enables the ESB-Es to significantly increase their network support to other units with more nodes and less manpower, while reducing transportation requirements by over 60 percent.

“With this reduction in size, we are going to be much more mobile,” said Cpt. William Lane, Alpha Company commander, 50th ESB-E, during SNN training. “Our teams are able to load up faster and get out the door to the mission quicker, and the smaller footprint makes our teams a lot more resilient.”

Also included in the ESB-E Capability Set 21 baseline equipment package the expeditionary high-throughput Terrestrial Transmission Line Of Sight (TriLOS) Radio, which provides signal path diversity in congested and contested environments; Secure Wireless for rapid command post set up and tear down; and network enclaves that enable connectivity to commercial and coalition networks.

The agile network tool suite is tailorable and scalable with medium and large satellite communication systems to enable support to different sized units, from teams up to corps elements, in a wide variety of mission sets.

“The fluidity that comes with the

design provides flexibility across the whole spectrum of tactical operations,” Mallory said.

In line with the Capability Set acquisition and fielding concept, the Army leveraged informed experimentation in operational and lab environments, and continual Soldier input from training, field exercises, and real-world unit support, to inform decisions on capability, unit formation, and tactics, techniques and procedures (TTPs). During the year-long pilot, the 50th ESB-E successfully used the prototype equipment to provide communications support during approximately 60 training exercises and real-world unit support in over 15 countries, including two real-world Immediate Response Force missions.

“We have a number of Soldiers who were part of the proto-

type and are now part of this pure fleet fielding, and after all of the feedback they provided to the PM and the vendors, clear as day, they are able to see that they had been heard,” Mallory said. “I think we are only going to get better with each iteration, knowing that our feedback is going to be heard, actioned, then put into the program, and collectively keep us moving in the right direction.”



Pfc. Nathan Bowens, Scalable Network Node operator for the 1st Platoon, Alpha Company, 50th Expeditionary Signal Battalion (ESB-E) connects cables to the Very Small Aperture Terminal (VSAT) modem. US Army photo

New equipment training, fielding helps modernize Signal School

CW4 Jose Gilbert
US Army Signal School

The US Army Signal School's latest New Equipment Training/New Equipment Fielding (NET/NEF) is the first of many phases in modernizing the school. Thus, with supporting results attained from a 2015-2016 Signal

GAP 15 assessment, which culminated with developing the GAP 15 solutions to realign Signal capabilities, the schoolhouse has implemented a NET/NEF supporting the mission. The New equipment training will establish multiple variants of light, rapidly deployable, scalable Commercial of the Shelf (COTS) signal antenna and baseband systems capable of supporting the changing

needs of warfighters today and in the future. Moreover, it will realign the signal capabilities to support and reshape the Signal Regiment for multiple domain operations. Notwithstanding the immediate need and requirements for modernization, the Signal School is making significant strides to implement new equipment training within its courses.

The Signal Schools' last big push in tactical communications modernization was back in late 2013 when it began to receive the then-latest Warfighter Information Network-Tactical Increment 2 (WIN-T Inc 2). In this latest update to the school, the



Getac Node Manager
Laptop



PacStar
Enclave
Chassis

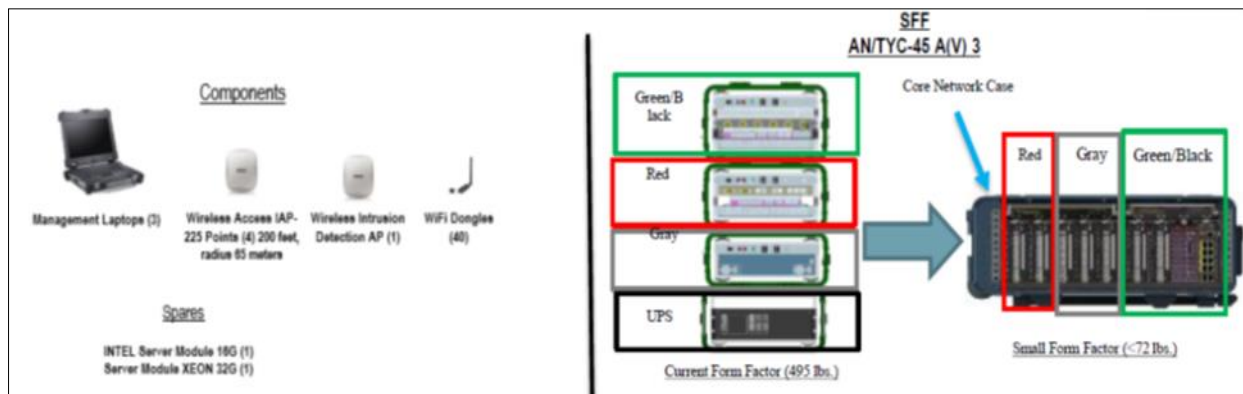


KG-175D

- Seven hard transit case solution
- Set up: 35 minutes
- Target MOS: 2 Signal Users as Operator/Maintainer (25S/25Q/25B/25N)
- 2.4M Inflatable Satellite Antenna (ISA): KA / KU / X
- Feed Assemblies: 12W KA / 12W KU / 25W X
- Modem: MPM-2000 NCW Modem
- Throughput: up to 8 Mbps transmit / 8 Mbps receive. Transmit dependent upon power, frequency space, modulation, and symbol rate.
- 17 user access ports per user enclave.
- 4 Enclaves: Supports 1 Colorless enclave and 3 Secure enclaves capable of supporting NIPR and SIPR classification domains.

The Transportable Tactical Command Communications (T2C2) program of record is an initial entry satellite system that provides agile, robust voice, video, and data communications.

Graphic by PEO C3



Small Form Factor Secure Wireless uses the National Security Agency-approved Commercial Solutions for Classified solution to provide secure classified and unclassified Wi-Fi to the Command Post. By going wireless, command post set up and tear down times are significantly reduced for increased unit maneuverability, operational flexibility, and survivability

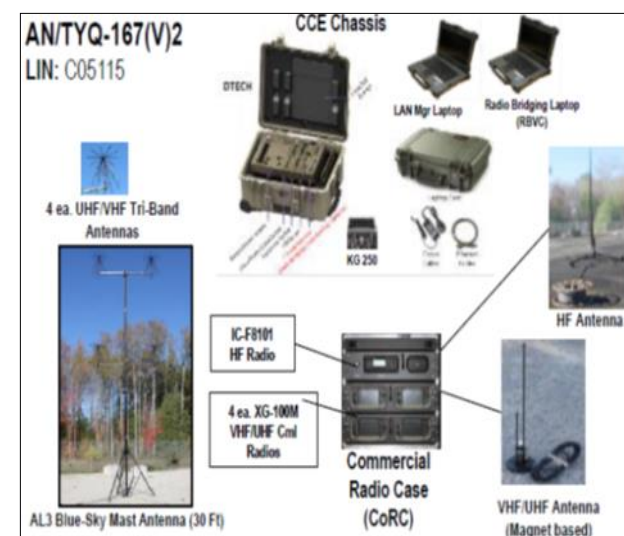
NET/NEF along with New Material Introduction Brief (NMIB), and In-Progress-Reviews (IPRs), began to shape the delivery of new communications kit early Fiscal Year 2020 with plans to field the CCoE Signal School by the end of the Fiscal Year 2020. As part of the Army's push to continually improve the network and training, the latest program of record communication suites in the NET/NEF includes The Transportable Tactical Command Communications (T2C2) kits consisting of Light and Heavy versions, and the Network Modernization Kits (NETMOD) composed of high –capacity Terrestrial Transmission Line of Sight (TRILOS) Radio kits, Commercial Coalition Equipment (CCE) kits, and Command Post Wireless (CPW); Small Form Factor kit.

The initial phase of the NET/NEF

included a two-week validation exercise (VALEX) led by PEO C3T/PdM fielding personnel along with school-house technical oversight. Following the two-week VALEX was the New Equipment Training in a train-the-trainer (Training Instructors) sessions with New Equipment Fielding running parallel with training and course completion. Following the successful NET/NEF, the school analysis will determine which Military Occupational Specialties (MOSs) will receive training and schedule implementation. Pending analysis, some of the new equipment training may start as early as mid-fiscal year 2021.

Moreover, there is a positive impact to be realized when operational units begin to receive newly trained Signal Soldiers and Leaders who have the knowledge and skillset to

support functional units with organic modernized Communications Kit. Additionally, supporting this endeavor is the proven Expeditionary Signal Battalion - Enhanced (ESB-E) concept. The concept highlights scalability across the Army; the end-state provides the capabilities to enable mission command from remotely located maneuver Company Command Post to a Joint Task Force Headquarters by augmenting the supported unit with a scalable signal support team.



Commercial Coalition Equipment (CCE) provides expeditionary coalition or commercial network connectivity to enable mission command, network communications (voice, video, and data), and situational awareness between Army, Joint, and coalition forces, in support of both military and civil operations. CCE is a core component in the Army's Mission Partner Environment. Courtesy graphic

Why Taking the Army Advanced Operations Course is worth it

Maj. (P) Paul Dangelantonio
Pennsylvania Army National Guard /AOC Student, Class
SG 19-21

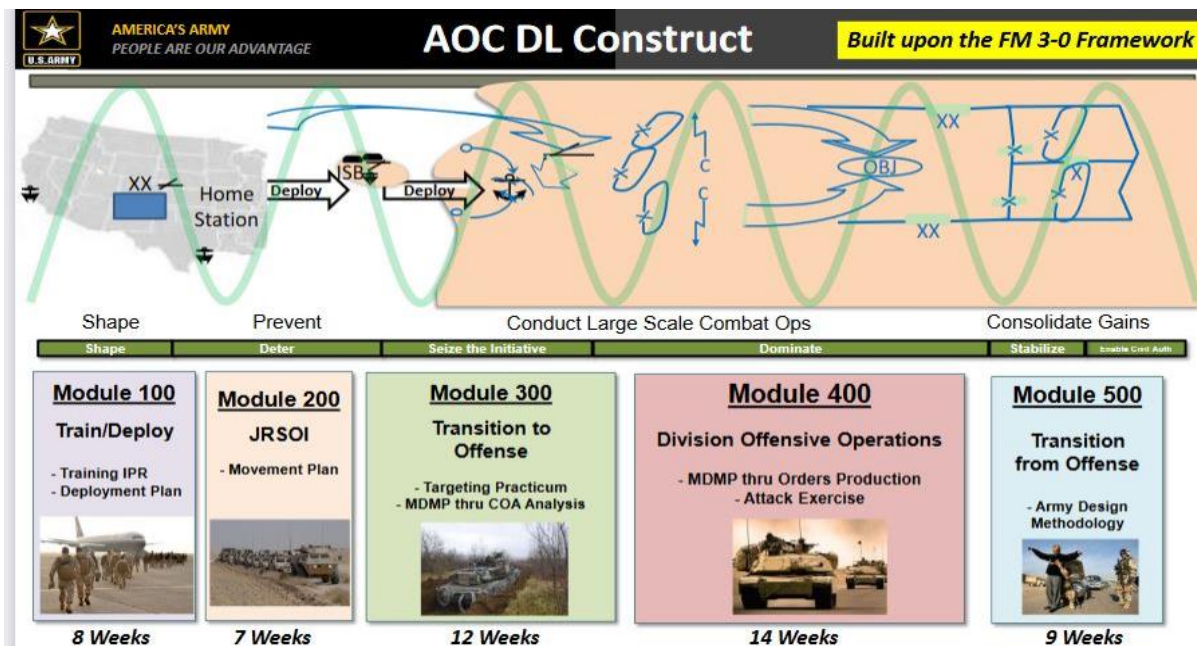
Bottom line, there is never a good time to attend Army schools. There will always be something that takes priority, such as a family event, unit training, or civilian schooling that consistently discourages us from adding anything else to our already busy lives. For me, finding a reason not to attend an additional Army school, like the Advanced Operations Course (AOC), almost become

the objective when I learned the course was not required for me to advance to the rank of lieutenant colonel. That is until my Brigade S3 informed me that AOC was the best Army school he had ever attended.

I took stock of my S3's recommendation, talked it over with my house hold six, and, even though it was a deployment year, took the leap and signed up for AOC. I will tell you after almost seven months into AOC, my BDE S3 was not wrong. AOC is without a doubt one of the most useful schools I've taken in my 22 year Army career. It takes everything that you've already learned as

a basic staff officer and takes it to the next level. As the Course Objectives state, it teaches you how to think and react as a staff officer serving on a "general staff conducting unified land operations in a joint, interagency, intergovernmental, and multinational environment." Most of-ficers – whether it be Comp 1, 2, or 3 – will spend time on a general staff and knowing how to conduct the Operations Process, in deployment offensive and defensive operations is critical to success in those general staff positions.

So enough of the Army pitch, what is it actually like to take the course? First, it is structured in blackboard very similar to Intermediate Level Education (ILE), with quizzes, readings, and module papers.



Courtesy graphic



Courtesy graphic

What makes AOC different than ILE (which I did online as well) is the small class size (18 officers in my class) and the one-on-one instructor interaction, who is the same throughout the course. Also, AOC is different than ILE in that you have to work group projects and act in various general staff officer roles (outside of your branch) in various operations process scenarios. It forces you to learn other branch roles/functions

and with the help of other officers in your class who bring varying levels of experience to the table, everyone learns something from each other in the class. The biggest thing that sets AOC apart in my opinion though, is the professionalism and understanding from your instructor and other class members. For example, COVID 19 and hurricane season hit during my AOC class. The instructor was very understanding with distributing the group work to account for these events and other group members who were deployed. My class members were very understanding and more than happy to pick up the slack during those group projects. On certain group projects, you may be the lead and have the majority of the slide briefing to pull together by corralling the other staff members. However, if things come up and you need to take a step back during a group project because of outside events (or COVID 19/ hurricanes) the group members help picked up the slack for those that were overcome by outside events.

AOC is not meant to crush you and take away your free time. The goal is to teach you critical general staff officer skills by learning and collaborating amongst the class and instructor. My class members have

been nothing but accommodating and professional to work with. The instructor is always available for questions and or guidance and in my opinion is very fair when grading assignments.

So with all that being said, the question should change from “Why take AOC” to “Why not take AOC?” The course is structured for you to learn and succeed; and the skills taught in the course will be invaluable in your Army career. If I signed up for AOC during a deployment year, took the course during the COVID 19 pandemic, and three hurricanes, you can to. Take the plunge, don’t be afraid, and enjoy it!



Courtesy graphic

Results may vary

My life as a Military Exchange Officer in the United Kingdom

Maj. Mark D. “Nix” Natale
US Army Military Exchange Officer

I have been luckier than most. I’ve had the honor to command a Joint, Special Operations Signal unit in the Pacific, to serve in a Special Forces Group, deploy onboard a naval vessel with the Marines, and be a Multi-national Maneuver Task Force Observer, Coach, and Trainer at Europe’s largest CTC. But nothing compares to being selected as the US exchange officer, assigned to the British Army headquarters in the United Kingdom.

When the list of 289 available positions for the 20-01 assignment cycle was posted in the AIM marketplace, I was immediately drawn to a single billet with the extremely detailed description of: “*Exchange Officer – UK, Signal School, Fort Gordon.*” What is this assignment, I asked myself? Is it the Royal Signal School in England, or a liaison position at Fort Gordon? What are the duties and responsibilities? Why have I never heard of this job before? Is this too good to be true? In reality, I had heard of this mythical assignment before, and it is too good to be true. It is called the Military Exchange Officer Program (MPEP). I can tell you, it is the best, most fulfilling job I’ve had thus far, and I’m urging everyone who reads this to apply for this highly selective and amazing opportunity.

The MPEP program enables officers of every branch to serve as a foreign exchange officer with a handful of different partners. For the Signal Corps this includes the British Army, the Australian Land Forces, and the German *Bundeswehr*. The goal when you first arrive as an



British Army Headquarters
Photo provided by Maj. Mark Natale

exchange officer to the British Army is to be the subject matter expert on everything American; and, when you leave, the Army expects you to be an expert on everything British. This is a once in a lifetime assignment that field grade officers need to aggressively pursue. The major benefit and distinction of the MPEP program versus other training with industry programs, or liaison billets is that you are actually part of the British Army, not just attached to them. In this case, you *ARE* a primary member of the British Army staff and they treat you as such.

Shortly after I arrived to the British Army, I was put in

charge of all C4I modernization programs and capability development and was also a key member of the US/UK interoperability team. I had to quickly understand the system and start giving direction on several major programs such as Land Environment Tactical Communications and Information Systems (LE TacCIS), MORPHEUS, TRINITY, BEARES, and the IRE2 (Innovation, Research, Experimentation and Exploitation (IRE2)



*Maj. Mark Natale and Lt. Gen. Patrick Sanders, CBE, DSO, Commander Field Army, British Army, after delivering the annual Kermit Roosevelt Exchange Lecture.
Courtesy photo*

project. This was a huge responsibility and undertaking, not commonly found in other broadening opportunities. There is some technical understanding and experience required, but I will tell you that this is the most *non-Signal* job I've ever had in the regiment. If you are looking to expand your experiences by being a project manager, overseeing a multi-billion-pound program or gaining experience in the combined, joint, multinational, and interagency environment, then this is the job for you.

I know what some of you are already thinking, because I thought the same thing before I applied: "I don't have the right experience for the MPEP". Well, you're wrong. Every experience you ever had as a Signal officer, especially the ones outside your comfort zone, are what they are looking for as an exchange officer. Remember that CTC rotation where you shared tea with those British Infantry Soldiers in their Land Rover? That time you helped your Jordanian classmate publish a CONOP at CGSC? What about when you sponsored those Brazilian exchange officers in your Jumpmaster class? Remember that joint C2 exercise with the Aussies? Or when your favorite international instructor presided over your last promotion ceremony? Well,

those experiences laid the foundation of becoming an MPEP. Don't discount your own experiences representing the regiment, the Army, or your country. No matter how small you think they may be.

Joint Publication 3-16 (Multinational Operations), the ABCA COH (American, British, Canadian, Australian and New Zealand Coalition Operations Handbook), and Army Regulation 614-10 (Army Military Personnel Exchange Program with Military Services of Other Nations) lay the ground work for the core mission set of the MPEP program. JP 3-16 specifically identifies, "The tenets of multinational operations are respect, rapport, knowledge of partners, patience, mission focus, team-building, trust, and confidence." In my assessment, the best MPEP officers are those that can build trust and rapport with their host nation counterparts. If you can relate to, understand, and build a relationship with your partners, then being an MPEP should be easy. But how do you do so during a global Pandemic? My answer: Trust.

I have trust in my British chain of command, and they have trust in me. Traditionally, building this trust is done through multiple formal and informal engagements, ceremonies,

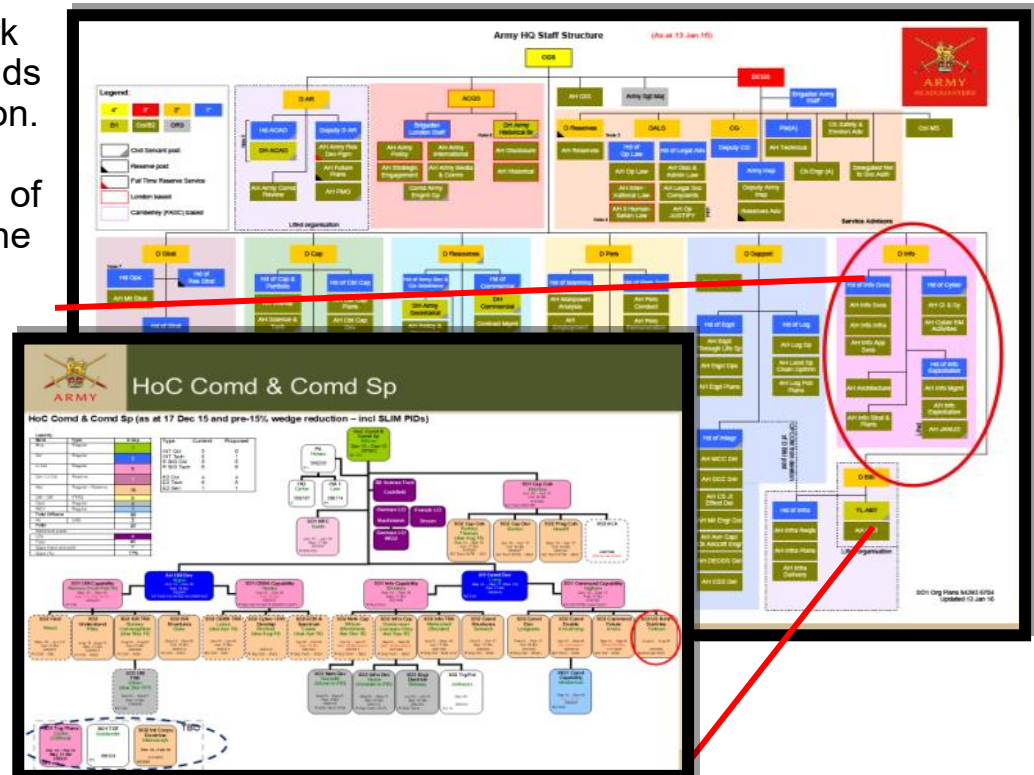
months of team building exercises, shared hardship, deployments, honoring their traditions and by spending many evenings in the Officer's Mess. These events and engagements over time is where you can demonstrate your value as a foreign exchange officer and show your worth to the British Army. With COVID-19 disrupting, canceling, and delaying these opportunities the task to build rapport and trust is now a bit harder. My answer for how I've overcome this overt handicap is relentless engagement, or as I call it seeking "Offensive Opportunities".

I'm a few months into being an exchange officer during COVID and I can tell you that persistent engagement is the only thing that has bred success. I would recommend any officer going into a similar exchange or broadening program strive to find these opportunities. If you choose to apply for the MPEP, you must be fully prepared to make your own success and seek out new opportunities and priorities. No one will hand you the answers on a silver platter. The job is what you make it. With the MPEP, you have the chance to engage high level leaders in the British Army and at NATO, influencing international policy. But you have to seek out and engage these leaders. I've heard of

other officers that wait to be told what they should be doing. As an MPEP, you do not want to be in that position. It is your duty to add value, build a relationship, foster trust, and be comfortable operating in uncertainty.

You can do this during a pandemic, but you have to get creative and use all the tools available. Your first order of business should be to know the organization. Nothing builds trust and confidence faster than someone who has done their homework and understands the organization. Or at least the bare minimum of mapping out the hierarchy. The British Army headquarters is very different, it is relatively flat, compared to the US. You should not be surprised to share an open work space or area bullpen with several colonels, and brigadiers.

And the flatness of the organization fosters teamwork, personalization, and rapport building amongst the staff. The monikers given between NCOs and Officers was quite friendly and personal. Senior officers will call you by your first name and they expect you to use their first name in conjunction with their rank. Colonel James, or Lt. Col. Edward is preferred to Colonel Smith or Lt. Col. Miller. Last names and "Sir or Mum",



Task Organization of the British Army HQ. The HQ is broken into several different directorates (D groups). D-Info (Information Directorate) is the equivalent of the US Army's CIO/G6.

Graphic provided by Maj. Mark Natale



UK and US uniform patches.
Photo provide by Maj. Mark Natale

is reserved for quite formal affairs or disciplinary proceedings.

Being an MPEP embedded with the British Army reminds me of being in the Special Operations community. Sometimes the person in charge of the project is the most junior in rank, but the most senior in experience. Some MPEP officers struggle with this culture shift, especially if they have never been exposed to the British informalities before. Needless to say, even with this cultural difference, they are the most professional Army and our closest partner in the world.

Once you understand the nuances of rank and regimental affiliations,

structure and led by a two-star general officer. In many cases, the US MPEP is just a few steps away from very senior key leaders that can make decisions on UK national policy, if it falls within their purview.

This flatter structure, increased familiarity, and smaller size of the staff surprises most MPEPs once they arrive, but you need to keep in mind the entirety of the British Army is under 79k active duty personnel. Or the equivalent of the number of Soldiers we have stationed in Germany and Korea. There are over 476k Soldiers on active duty in the US Army and the British Army is roughly 16% that

you can now focus on the bigger picture of the directorate system within the headquarters. Each British Army directorate is aligned very similarly to their US counterparts by warfighting function. As an example, there is a Logistics, Information, and Operational directorate, similar to the US Army staff G4, G6, and G3/5/7 respectively. However, these sub-organizations are relatively flat in command

size.

With this flatter hierarchy and smaller force size, junior leader cooperation and influence is not just a by-product of the environment, but it is also a force multiplier. In my humble opinion, you have more influence and impact as a Major, serving as an MPEP officer, than you potentially would as a Colonel in the Pentagon. Blasphemous words, I know, but being an MPEP provides you access and experiences not commonly found in other parts of the regiment, or the Army at large. As I've said before, your results may vary, but I can attest that the opportunity to influence change is far more permissible and probable as an MPEP.

Once you understand the organization and where you fall in the directorate, your next challenge is to understand your role, and duties and responsibilities. For this specific Signal MPEP billet in CAPDEV, you are charged with managing the current portfolio of future C4I systems and long-term US/UK interoperability efforts. Even though, this position requires some technical understanding, what you are really doing is high level program management. I was lucky to be selected for this position, but once I arrived and realized the scope of my duties, I was extremely lucky to be

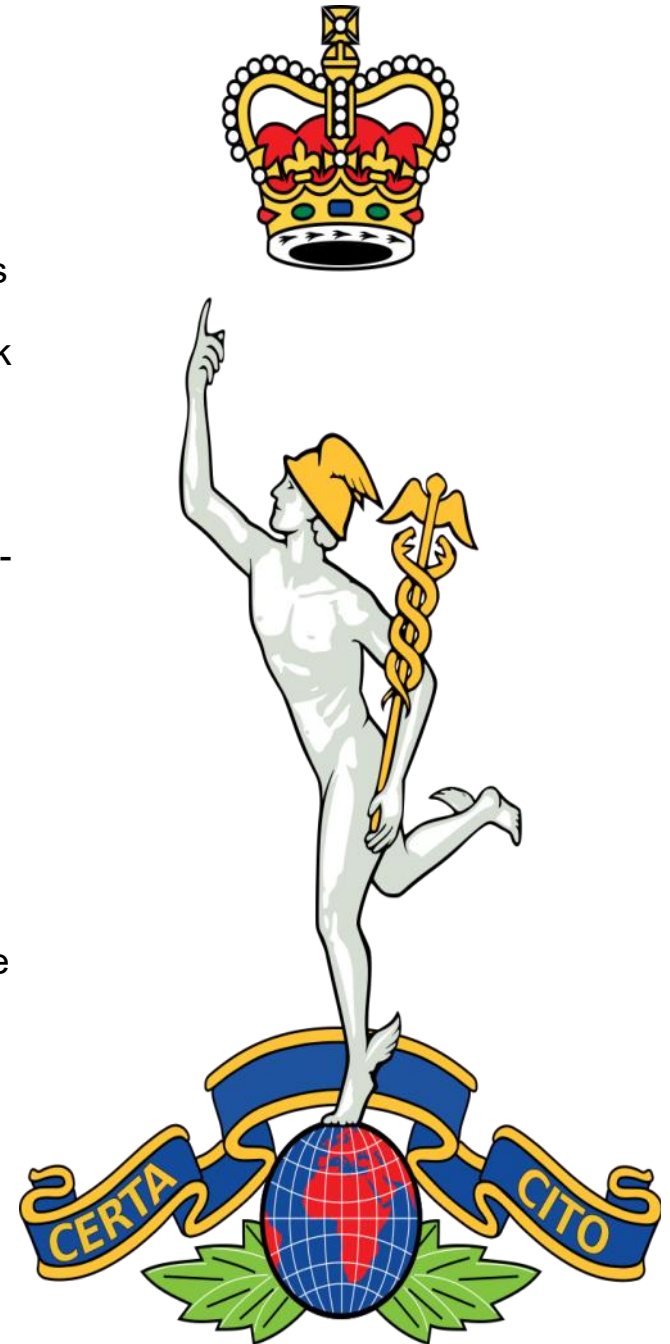
selected for the CORRECT position.

What I mean by that is most of your duties are akin to senior project management, not necessarily Signal specific tasks. I was very lucky that my skillset (which I highlighted in my AIM resume) was more aligned to project management instead of solely focused on technical tasks. My experience working in the S9 channels, pursuing a PMP, and my civilian experience as a manager is exactly what this MPEP billet required. You may be a fantastic Signal officer, but the MPEP will push you and demand that you are also a great project manager and an overall well-rounded officer. For officers going to resident CGSC and would like to apply for MPEP, you need to focus on the classes involving procurement, policy, MDMP, finance, and program management. In short, pay attention during those extremely exciting DOTMIL-PF classes! Things like the procurement process, national defense strategies and the "Purple Pipeline" will all make an appearance in your day to day activities as an MPEP. At this level you are working international policy, 5-year plans, and joint staff talks. You are not focused on filling radios anymore.

I also will tell you to build trust with your British team, you need to take

advantage of every opportunity you can outside your comfort zone.

Again, your results may vary, but when I went to CGSC a few years ago, before COVID. I set out to exploit every opportunity offered. As a result, I was able to earn my master's degree from Kansas University, in Global, Interagency studies and stack my elective courses in order to walk away with three Additional Skill Identifiers. That may not be the right path for everyone. But being an MPEP in this unique situation, I've relied heavily on the things I learned from my Joint planner, Space enabler, and Joint Air-Fires courses. Resident CGSC also provides opportunities to earn your PMP certificate and get several weeks experience working with your British counterparts during the "Eagle Owl" exercise. Every year British Army officers come to Fort Leavenworth in order to work with the US on the MDMP planning process and the UK "Seven Questions" planning framework. Participating in Eagle Owl is a gateway to the UK MPEP program. I now work with many of the same officers that came to Fort Leavenworth and have maintained a relationship with others I've deployed with over the years. Building and keeping their trust immensely helped with my integration



*Cap Badge of the Royal Corps of Signals
Courtesy graphic*

into the British Army.

At this point you should know the organization, understand your role, and you are actively working on the USAREUR commander's top priorities. What's next? How do you maintain rapport and build trust when you are on a national lockdown? Luckily, we have an App for that. You will find that the British Army is far more comfortable utilizing telework capability and collaborative tools than you may expect. Getting comfortable building rapport and trust in a virtual environment is a new precedence, and is the main weapon in your arsenal.

The British Army utilizes an internal network called MODNet, this is similar to US NIPR in respects to

classification and employment. The main difference is that MODNet has several organic sharing applications and collaborative tools that are able to be shared across all branches of their MOD. Even prior to COVID, the British Army was looking at telework and virtual environments as a way to augment the effectiveness of a smaller staff and integrate with the Royal Navy and RAF as a joint force. Getting comfortable on MODNet is key for the MPEPs serving in the UK. Other platforms used is Skype and MS Teams, which is a great forum for executing working groups remotely. I was able to build trust immediately by executing an Innovation working group and a US/UK interoperability

working group across 9 different locations and multiple time zones outside of the HQ.

Another way to build trust is to target and engage leadership at decisive points in person. Obviously, COVID mitigation safeguards limits your face to face exposure, but working within those limitations you can still get "Face time" with your British chain of command and share a brew (tea or

coffee). The other striking difference between the US and the UK is the manner in which they are bound by the National Health Service (NHS) and Her Majesty's Government guidance in regards to COVID. In the US, commanders have a certain level of autonomy to place extra restrictions on the garrison or lift some restrictions for critical units, while in the UK, the MOD (Ministry of Defense) sharply follows government guidance. Rules that apply to the general public are rarely overturned by the MOD, and as a result, the MPEPs working at the Army HQ must be comfortable working outside the confines of the building to accomplish the mission.

My first several engagements with the D-Info Major General and the CAPDEV Brigadier were all done from the relative safety of my Living-room over WhatsApp and MODNet Skype. Not an ideal situation, but being able to communicate effectively over telework platforms builds rapport with your chain of command and teammates. I also recommend the proper use of social media and chat applications like Slack, LinkedIn, and MS Teams as a way to keep in touch with your fellow British officers on days you have to work remotely. Several of our chat forums have gone



*Maj. Mark Natale lays a wreath at Camp Blandford, home of the Royal Signal Corps, in honor of Remembrance Day.
Photo provided by Maj. Mark Natale*

from all business, to an informal friendship in the matter of weeks. This is just one example of building trust and rapport in the digital age. This may seem like only a millennial's problem; however, it is a tool you must exploit as an MPEP, regardless of what generation you fall in. Other tools in my ruck sack to build relationships are the use of white papers, published articles, building an online presence, and mentorship forums. These are all ways to support the British Army, further USAREUR's priorities, and reach fellow officers in the Signal regiment.

What's the new littoral combat ship that the US Navy is deploying in the Pacific? Can the Army Apache helicopter land on the deck of a carrier? Can you have one of your mates at the embassy look into travel visas for me? Can you have Space Force give me call? Do you always take your tea without milk and sugar? Who did you vote for? What do you think of Brexit? This is just a sample of some of the wildly vast and unique questions I get on a daily basis. Everything from military capability, to customs and courtesies, politics, social media influence, and foreign policy interpretations.

As an MPEP you have to be prepared to address all of these ques-

tions. Your role as an MPEP is vastly different than what you have done in the past. Being the sole American in my directorate and one of just a handful on camp, inherently makes you a target for good natured interrogations. The different uniform and funny accent you have also doesn't help matters either. As a result, be prepared to be approached by everyone and anyone that needs assistance with anything US related.

You also have to keep in mind, the British Army does not care about your branch, or the small professional

community of what you represent. For all intents and purposes, you represent the entirety of the United States, every branch of the Armed Forces, and every military sub-group. You cannot approach this job merely as an Airborne Signal officer from a "Swing State", or a Combat Aviator from Alaska. You are an American officer. Your actions, words and deeds reflect upon yourself, the regiment, the Army and the United States. This position is as close to being a diplomat as possible, while still in uniform. As such, you must be diplomatic in all



*UK ration pack
Photo by Maj. Mark Natale*



UK equivalent of the Uncle Sam "We Want You," poster.
Courtesy graphic

of your dealings and understand this extremely complex environment. Being a forceful, divisive personality may have worked in the past, but it will not work well in a coalition.

Another key duty and responsibility you have is the obligation for the "Extra Curriculars". Being the sole American, you will be asked to represent the United States at several functions, ceremonies, and high-level events. Being comfortable delivering remarks as the key note speaker or teaching a class to British officers at Sandhurst is a requirement of the position and a forgone conclusion. I al-

so strongly believe that these activities are just as important, if not more so, than your other duties managing the C4I interoperability programs. These events build trust and forge a relationship with your counterparts, which is the heart of the MPEP. The British Army feels the same way, my UK Brigadier told me his view on the importance of these events and shared his experiences as an exchange officer assigned to the 82nd Airborne Division. He said, "Mark, I can get any ol' Yank to come over and work on these programmes, but what I really need you to do is experience the culture and be part of the British Army." Even for the host nation, what you bring to the table as an American MPEP outweighs any tangible products you could deliver. Your ability to build a relationship and support our closest partner is what they want.

If everything I just said motivates and excites you, then I would urge you to apply for this once in a lifetime opportunity. The British Army recruiting Motto is: "*Be the Best*" and that is exactly what they are looking for. They need the best of us to apply and represent America abroad. It's also what the Signal regiment wants to deliver to the MPEP program. Like a paratrooper, you will be alone and

unafraid, executing disciplined initiative on behalf of the Army, surrounded on all sides with the closest reinforcements over the next ridgeline. If this awesome responsibility strikes a chord with you, then we need you to take up this banner.

It is not lost on me how lucky I am, and I'm extremely humbled to be considered by my leaders and mentors the best choice for this position. My advice to my fellow officers in the regiment is to not second guess yourself and strive to be the best. Grasp at those opportunities you think may be slightly out of reach. Do not self-select out of an opportunity. If you would have told Private Natale that one day, he would be in the UK representing the US Army, I know he never would have believed you. I didn't get here alone. If it wasn't for my family and the Soldiers, NCOs, fellow officers, and leaders that pushed me to be a better officer, then my results would be very different. The MPEP brings out the best in our Armies and the value of the program should not be overstated.

The MPEP is what you make it, I urge you to take the path less traveled, and represent the Signal Corps, the US Army, and the nation abroad. Your results may vary, but your impact will be unquestionable.

Industry lessons in Cyber Security

Maj. Suhan Kim
Information Systems Engineer

If you have ever served in a S6-equivalent capacity, you have probably dealt with a number of Soldiers and Officers, whose domain accounts had been locked because they had not completed the Annual DOD Cyber Awareness Challenge. Your Information Assurance (IA) Compliance slide was probably one of the last slides, if not hidden, in the Command and Staff meeting. Your purchase request for additional computing components that would harden the security of your unit's network was probably on the bottom of the unit budget priorities. These undeniable realities have been the culture of just about every unit that I have been in over the past twelve years. We are living in the increasingly connected world where IT jargon has become our everyday vernacular, and yet, today's military remains incredibly insensitive to cyber threats. It seems that many of us, including the Signaleers, still have tremendous optimism bias towards cyberattacks, thinking "it will never happen to me."

I had a distinct opportunity to work with AT&T Inc. under the Training with Industry (TWI) program last year. I was assigned to the AT&T Computer Security and Incident Response Team (ACSIRT) located in St. Louis, Missouri. ACSIRT is a specialized 24/7 technical team that serves as the central coordination point of contact (POC) for all enterprise computer security incidents, internal to AT&T. As I was settling into my cubicle area on the first day, I noticed that a handful of the ACSIRT security analysts were actively responding to a security incident involving a potential cyberattack. This malicious intrusion

subsequently triggered the corporate intrusion detection system, which generated automated security alerts and notified ACSIRT in a form of incident ticket through a Security Orchestration, Automation, and Response (SOAR) platform. The security analysts from ACSIRT reviewed the tickets and processed them in accordance with an appropriate Methods and Procedures (M&P). M&P is a corporate-approved guideline with specific instructions for technicians and/or users to follow in case of a technical incident. There are hundreds of M&Ps archived and readily available to be referenced for various types of incidents. Witnessing one of the world's largest telecommunication companies targeted by a potential cyberattack first-hand really opened my eyes up. I, however, was equally impressed with the preventative measures that AT&T has emplaced against cyberattacks. One of these cyber-security measures was the Bug Bounty initiative, which I was assigned to partake in.

AT&T has recently partnered with HackerOne in order to implement the Bug Bounty pro-



*Maj. Suhan Kim outside the AT&T offices where he worked as a Training With Industry Fellow
Photo provided by Maj. Suhan Kim*



Courtesy graphic

gram within its cybersecurity infrastructure. Bug Bounty is a highly sought-after cybersecurity methodology that a large number of organizations, including Microsoft, has adapted. The program is designed to incentivize security researchers, also referred to as ethical hackers, around the globe to discover system vulnerabilities or exploits that may have been overlooked during software or hardware development processes. The researchers exploit the vulnerabilities in private and report them to the requested organization. The organization then confirms the validity of the reported vulnerabilities and rewards the researchers accordingly based on severity of the vulnerabilities or other criteria prescribed in a service agreement. I was blown away by this innovative security concept, especially given the fact that over 70% of cybercrimes were financially motivated. Bug Bounty can not only reduce the rate of illicit cyber activities, but also recruit and groom young, talented technical experts from all over the world regardless of

their educational backgrounds or job experiences. Most importantly, the program was quite effective. I received an average of 5-6 Bug Bounty cases through a Jira-based management platform on a daily basis. Sporadically, there were spikes in incoming cases amounting up to 30-40 cases a day. These cases involved a broad range of potential vulnerabilities, including cross-site scripting, sensitive data exposure, lack of function level access control, security misconfiguration, command injection, etc. Each case accompanied with a summarized report with nature of vulnerability, steps taken to exploit, screenshots, and recommended fixes. As a security analyst in ACSIRT, I reviewed these cases and the associated reports in order to ensure validity, severity, and the origin of these potential vulnerabilities because there have been numerous cases in which vulnerabilities did not originate from the AT&T-owned IP spaces. Upon completion of the initial review, I began investigating for the appropriate owner of the case. The investigation often turned out to be a challenging process because AT&T owns countless computing devices around the world. Although there was a number of tracking tools available, it still required manual queries and human

intuition to accurately determine the POC. Once successfully identified and notified, the POC addressed the reported issues with the continuing support from ACSIRT.

I processed 923 Bug Bounty cases during my tour at AT&T. As great as it may sound, those could have been 923 possible points of entry that cybercriminals could have penetrated. What devastated me even more was the fact that they were only a fraction of the cases that ACSIRT has processed collectively. Working with ACSIRT has broadened my perspective and knowledge on cybersecurity, but most importantly, it heightened my cybersecurity awareness. My daily exposure to these vigorous cyber activities has made me realize that they are very real and incredibly prevalent, maybe even more active than what we typically estimated. Fortunately, there are various sophisticated tools available, some of which the Army has already adapted or is in process of implementing. However, cybersecurity can only be effective when all of our IA workforces (that's everybody!) exercise it with due diligence. It starts from creating an enterprise cybersecurity culture, which will subsequently raise awareness within our formations, all the way down to the lowest-level.

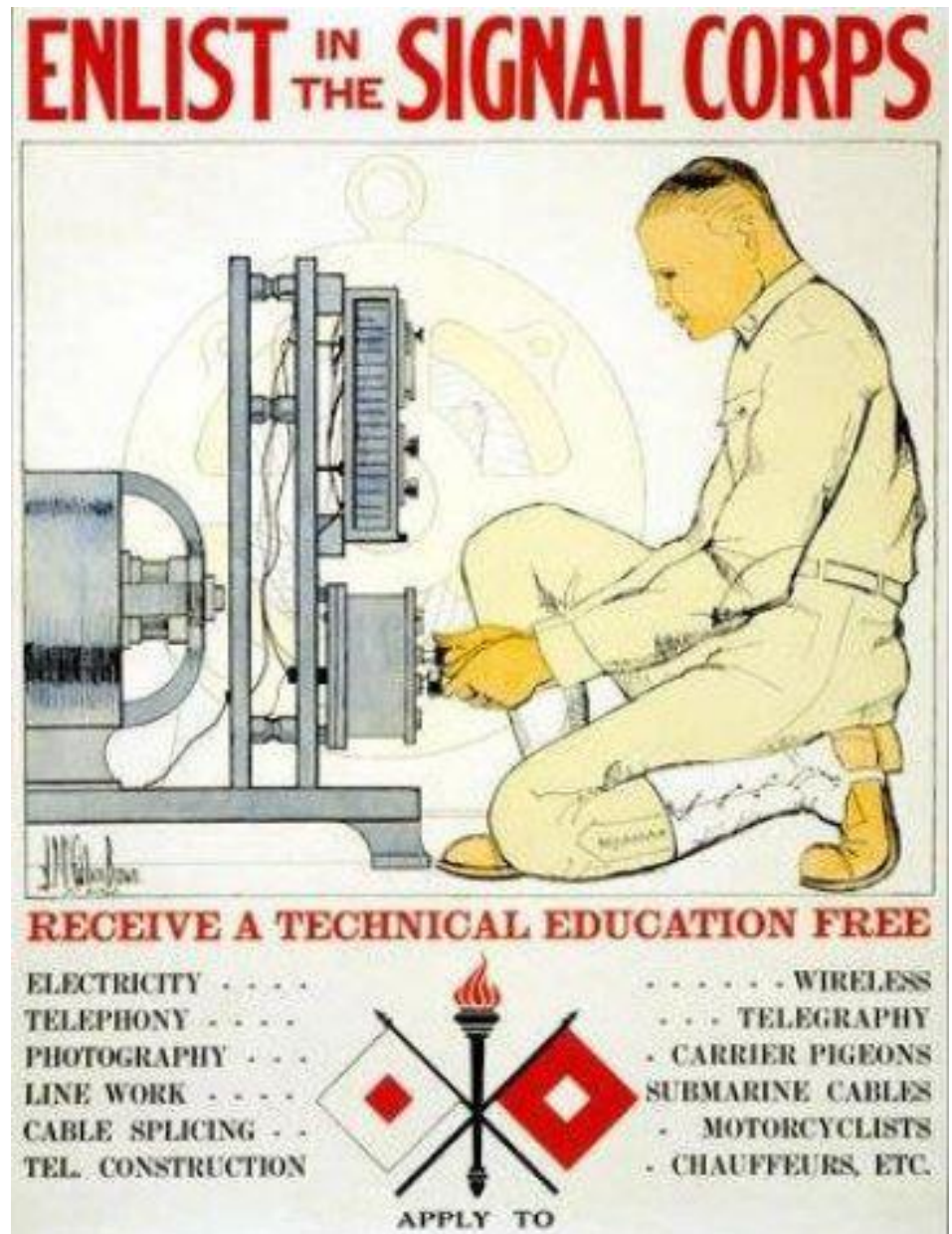
A Brief History of the US Army Signal School

Editor's note: This article originally ran in the April 2020 edition of the Army Communicator and is being republished upon request

Steven J. Rauch
Signal Historian

In 1859, the War Department provided Albert J. Myer the re-sources to test his proposed wig-wag visual signaling system. Myer and a few assistants arrived at Fort Monroe, Virginia in April to determine the best design for the equipment and associated training procedures. Upon acceptance of the wigwag concept by the Army and funding approval by Congress in 1860, Myer received the appointment of Signal Officer to supervise the manning, equipping and training of soldiers in wigwag operations. When the Civil War began in April 1861, a temporary Signal School was established at Fort Monroe in June to quickly train soldiers of all branches in the skills of visual signaling.

As the war progressed, the Army established a permanent Signal School at Red Hill, Georgetown, DC in August 1861. There, officers and men detailed from other branches were trained by the small cadre of acting signal officers, who themselves had been recently trained. The instructional methodology was for collective training of "sets" or teams, of officers and flagmen, with two officers and four enlisted men to a team. Signal training focused on technical and tactical skills, including sending, reading, and encrypting wigwag messages, horsemanship, and soldier skills to survive on the battlefield. After the Civil War, Myer struggled to maintain the



*A recruiting ad for the Signal Corps circa 1920.
Signal History Office Collection*



*Officer Quarters at the Georgetown Signal Camp of Instruction circa 1865.
Signal History Office Collection*

existence of the Signal Corps when political leaders questioned the need for the branch in peacetime. The Signal School at Georgetown closed and, for a brief time, training was conducted at the Signal Office in Washington.

In September 1868, Myer moved the Signal School to Fort Greble, an abandoned fort in southeastern Washington DC; but this proved unsatisfactory because of a lack of space for pole line and telegraph train maneuvers. In September 1869, Myer moved the school to Fort Whipple on the grounds of Arlington plantation overlooking the Potomac River because it had ample maneuver space in the surrounding countryside.

The school curriculum remained the same as in wartime until 1870, when the Signal Corps added meteorological training. On August 24, 1880, shortly after his promotion to brigadier general, Myer died. In 1881, the Army re-named Fort Whipple to Fort Myer to honor the legacy of one of the US Army's most distinguished innovators.

Myer's successor was Brig. Gen. William B. Hazen, a straight talking, outspoken officer. Unfortunately, Hazen's controversial nature often resulted in fractured relationships with peers and superiors. A long-standing dispute between Hazen and Lt. Gen. Philip H. Sheridan may have led Sheridan, the commanding General of the Army in 1885, to discontinue the Signal School at Fort Myer. Instead of instruction at a central location by skilled Signal Soldiers, technical signal training was relegated to unit commanders at their home stations, which proved to be less than successful. Although there was no official Signal School from 1885 to 1904, signaling did become part of the curriculum at other Army schools.

The lack of a Signal School caught the Army short at out-break of the Spanish-American War in 1898. To fill the urgent need for men the Volunteer Signal Corps was created

to bring in skilled technicians, such as telegraphers, linemen and telephone workers, from commercial industry. Signal training returned to its roots at Fort Myer, which once again became the home of the Signal School in 1899 where recruits learned the fundamentals of telegraphy, telephony, line repair, and visual signaling.

As part of the reforms instituted by Secretary of War Elihu Root in 1903, the Army launched efforts to modernize, standardize and expand its educational system. Along with the establishment of the Army War College in 1901, the War Department created a tier of service schools to include specific branch schools. As part of this new system, the Army established the Signal School at Fort Leavenworth, Kansas June 27, 1904 under provisions of War Department General Order 115.

Three departments were responsible for the curriculum. The department of signaling was concerned with optical, acoustical, and electrical signaling. The department of signal engineering included electrical and mechanical, as well as aeronautics, photography and topography. Finally, the department of Spanish rounded out the one-year course of study. The following year, War Department General

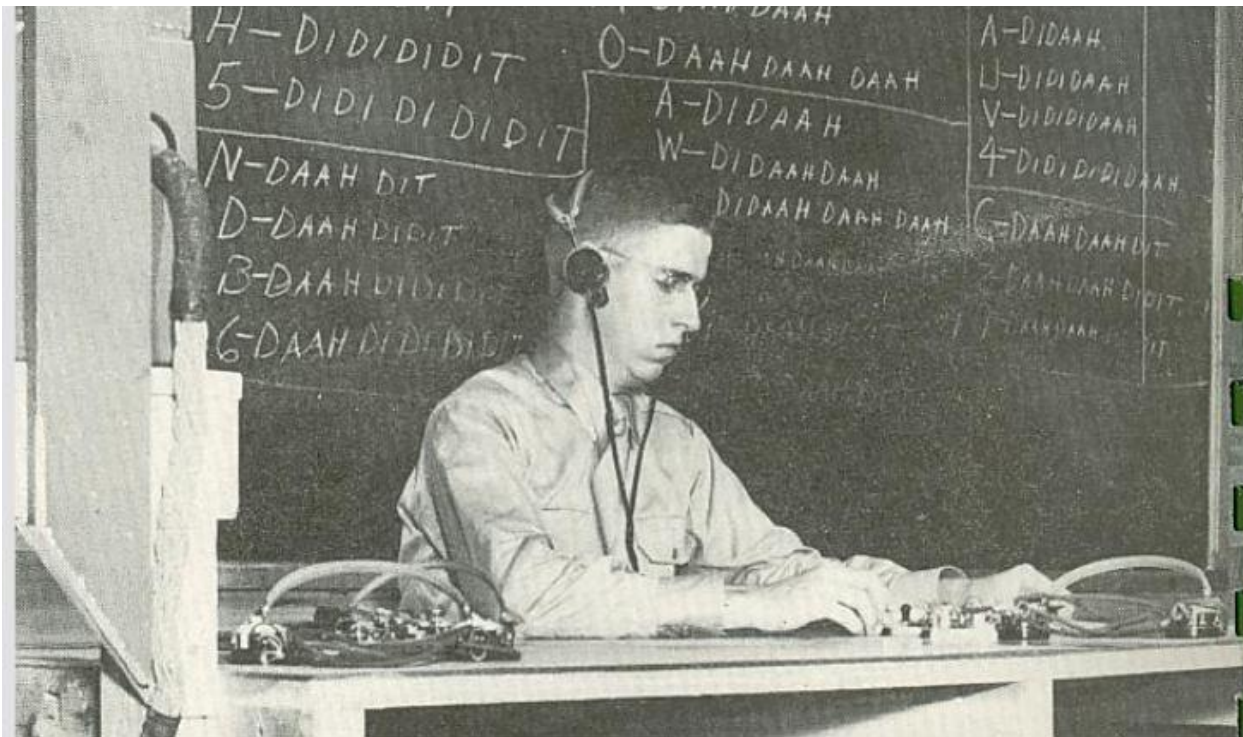
Order 140, August 19, 1905 specified the school name as the United States Signal School, and the course of study included French and German offered as additional languages. By 1913, the school expanded to include enlisted men.

On April 6, 1917, the United States declared war on Germany. Because Fort Leavenworth could not accommodate the influx of new students, so additional facilities had to be established. One of these was Camp Alfred Vail in New Jersey where the signal curriculum focused

on telegraph, telephone and radio operation. At the time, there was a pressing need for telegraph operators in France, so an intensive six-week training course was initiated. Most training focused on operations of two basic signal units: the Field Signal Battalion and the Telegraph Battalion. The Field Signal Battalions operated communications within front line divisions; the Telegraph Battalions maintained communications above division level. Wire, which carried both telephone and tele-graph signals, was the basis of most communication

training. In 1918, all signal-training activities at Fort Leavenworth were moved to a new radio school at Camp George G. Meade in Maryland. After the war, the Army decided to consolidate all signal training at Camp Vail, later re-named as Fort Monmouth in 1925.

War once again burst on to the United States December 7, 1941. In response to the world-wide conflict and advancing technology, a myriad of signal units were created. Aircraft-warning battalions and radio intelligence companies were just a couple of these specialized signal units. Joint Assault Signal Companies (JASCs) were developed to meet the unique communication needs of joint amphibious operations and included Army, Navy, Marine and Army Air Force personnel. As the war progressed, operational requirements became so pressing that students were sometimes taken out of schools to provide fillers for deploying signal companies and battalions. During World War II, Fort Monmouth hosted the Eastern Signal Corps Training Center. The installation had space for 1,559 officers and 19,786 enlisted personnel undergoing training. The Training Center consisted of the Eastern Signal Corps Schools for enlisted and officers. In addition, this



*Signal Soldier learning code at Camp Crowder.
Signal History Office Collection*

was the home of the Pigeon Breeding and Training Center. One of the largest training activities was the Officer Candidate School, which graduated 21,033 new Signal Corps second lieutenants from 1941 to 1946.

After WWII, an additional Signal Corps Training Center was established at Camp Gordon, Georgia in 1948. This school, in addition to the main school at Fort Monmouth, provided communications training during the height of the Cold War in the 1950s. In June 1962, the activities of the Signal Corps Training Center were reorganized into the US Army Southeastern Signal School. In March 1967, the Army began to study the feasibility of consolidating all Signal training into one location and decided that Fort Gordon was ideal due to its size and climate. It would not be until 1974 when new facilities were completed that all signal training was relocated from Fort Monmouth to Fort Gordon. The new organization was designated the US Army Signal Center and Fort Gordon October 1, 1974 and established the largest communications-electronics training facility in the world.

During the mid-1980s, the US Army struggled to cope with potential warfare in Europe and major developments in concepts, doctrine, weap-

ons and training drove the whole Army toward that goal. Then an entirely new aspect of communications technology made a significant impact on the Signal School. On June 16, 1987, the TRADOC commander directed the Army's Computer Science School at Fort Ben Harrison relocate to Fort Gordon. He made the decision to support the Army directive that the Signal Corps was to be the proponent for the Army Information Mission Area (IMA). Since the desktop computer was expanding beyond its original concept as a more effective typewriter into a device able to communicate with other computers via a network, the Army sought to leverage the development by co-locating automation and communications into an integrated training environment.

Courses conducted at the Signal School exposed students to Tier I –III architecture, from micro, mini and mainframe computers as well as local area networks (LAN), data communications, and UNIX. Artificial intelligence (AI) and automation data processing were also added to the curriculum. The goal was to provide Signal soldiers with technical skills to operate the IMA arena and keep pace with accelerating technology. On October 28, 1988, the Computer Science School officially activated as

part of the US Army Signal Center. Throughout the early 21st century, the Signal School has carried out the ever-changing mission to train and educate soldiers in the science of communications. As the organization evolved from the US Army Signal Center to the US Army Signal Center of Excellence, and finally the US Army Cyber Center of Excellence in 2014, the Signal School continued to function much as it had since the Civil War. Today the identity and heritage of the Signal School continues in the current organization along with the Signal Corps Regiment at Fort Gordon.



Today, the Signal School's mission is to drive the evolution of doctrine, organization, training, material, education, and leader development to provide the Army with multi-faceted, multi-disciplined Signal Soldiers to support Large Scale Combat Operations.
Signal History Office Collection

In the next



ARMY



COMMUNICATOR

Catching WAVES

